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EXAMINER

CHEN, SHIH CHAO

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No. 10/083,718	Applicant(s) ALSLIETY, MAZEN K.	
	Examiner Shih-Chao Chen	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2004.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
 4a) Of the above claim(s) 1-20 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 21-44 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 21-41 and 43 are rejected under 35 U.S.C. 102(e) as being anticipated by Hegendoerfer (U.S. Patent No. 6,326,922).

Regarding claim 21, Hegendoerfer teaches in figures 1 and 4-6 an antenna (100), comprising: a substrate (130) of dielectric material; and a plurality of electrically conductive elements (122, 102, 104, 106, 107, 108, 109) disposed on the surface of the substrate (130) to form a Yagi-uda dipole array (See FIG. 4), wherein the Yagi-uda dipole array includes a driven element (122), a reflector (118) and at least one parasitic element (102, 104, 106, 107, 108, 109), the reflector [118] disposed on one side of a dipole (122), and the at least one parasitic element (102) disposed on the other side of the dipole (See FIG. 4), and wherein the driven element (122) is separate and distinct from the at least one parasitic element (102, 104, 106, 107-109) (See FIG. 4).

Regarding claim 22, Hegendoerfer teaches in figures 1 and 4-6 the antenna (100), wherein electromagnetic energy is coupled from the driven element (122) to one or more of the at least one parasitic element through space and by surface waves in the

substrate (130).

Regarding claim 23, Hegendoerfer teaches in figures 1 and 4-6 the antenna (100), wherein the driven element (122) includes a first dipole element and a second dipole element (112, 114) extending colinearly in opposite directions from and perpendicular to a longitudinal axis of the substrate.

Regarding claim 24, Hegendoerfer teaches in figures 1 and 4-6 the antenna (100), wherein the first dipole element and the second dipole element (112, 114) have adjacent ends spaced apart at equal distances on either side of the longitudinal axis of the substrate (130) (See FIG. 4).

Regarding claim 25, Hegendoerfer teaches in figures 1 and 4-6 the antenna (100), wherein the at least one parasitic element (118, 102, 104, 106, 107, 108, 109) includes a reflector (118) and at least one director (102, 104, 106, 107, 108, 109).

Regarding claim 26, Hegendoerfer teaches in figures 1 and 4-6 the antenna (100), wherein the reflector (118) is disposed on a first side of the driven element (122); and wherein each director (102, 104, 106, 107, 108, 109) is disposed on a second side of the driven element (122).

Regarding claim 27, Hegendoerfer teaches in figures 1 and 4-8 the antenna (100), wherein the reflector (118) extends linearly across a longitudinal axis of the substrate (130) (See FIG. 4).

Regarding claim 28, Hegendoerfer teaches in figures 1 and 4-8 the antenna (100), wherein the reflector (118) is centered upon a longitudinal axis of the substrate (130) (See FIG. 4).

Regarding claim 29, Hegendoerfer teaches in figures 1 and 4-8 the antenna (100), wherein the reflector (118) is perpendicular to a longitudinal axis of the substrate (130) (See FIG. 4).

Regarding claim 30, Hegendoerfer teaches in figures 1 and 4-8 the antenna (100), wherein a first director (102) the at least one director extends linearly across a longitudinal axis of the substrate (130) (See FIG. 4).

Regarding claim 31, Hegendoerfer teaches in figures 1 and 4-8 the antenna (100), wherein a first director (102) of the at least one director is centered upon a longitudinal axis of the substrate (130) (See FIG. 4).

Regarding claim 32, Hegendoerfer teaches in figures 1 and 4-8 the antenna (100), wherein a first director (102) of the at least one director is perpendicular to a longitudinal axis of the substrate (130) (See FIG. 4).

Regarding claim 33, Hegendoerfer teaches in figures 1 and 4-6 the antenna (100), wherein the driven element (122) and the at least one parasitic element (118, 102, 104, 106, 107, 108, 109) facilitate a broadcast by the antenna of a signal having a free space wavelength.

Regarding claim 34, Hegendoerfer teaches in figures 1 and 4-6 an apparatus, comprising: an antenna support (132); and an antenna (100) mounted on the antenna support (132), the antenna (100) including a substrate (130) of dielectric material, and a plurality of electrically conductive elements (118, 122, 110) disposed on the surface of the substrate (130) to form a Yagi-uda dipole array, wherein the Yagi-uda dipole array

Art Unit: 2821

includes a driven element (122), a reflector [118], and at least one parasitic element (102, 104, 106, 107, 108, 109), the reflector [118] disposed on one side of a dipole (122), and the at least one parasitic element (102) disposed on the other side of the dipole (See FIG. 4), and wherein the driven element (122) is separate and distinct from the at least one parasitic element (102, 104, 106, 107-109) (See FIG. 4).

Regarding claim 35, Hegendoerfer teaches in figures 1 and 4-6 the apparatus, wherein electromagnetic energy is coupled from the driven element (122) to one or more of the at least one parasitic element (102) through space and by surface waves in the substrate (130).

Regarding claim 36, Hegendoerfer teaches in figures 1 and 4-6 the apparatus (100), wherein the driven element (122) includes a first dipole element and a second dipole element (112, 114) extending colinearly in opposite directions from and perpendicular to a longitudinal axis of the substrate.

Regarding claim 37, Hegendoerfer teaches in figures 1 and 4-6 the apparatus, wherein the first dipole element and the second dipole element (112, 114) have adjacent ends spaced apart at equal distances on either side of the longitudinal axis of the substrate (130) (See FIG. 4).

Regarding claim 38, Hegendoerfer teaches in figures 1 and 4-6 the apparatus (100), wherein the at least one parasitic element (118, 102, 104, 106, 107, 108, 109) includes a reflector (118) and at least one director (102, 104, 106, 107, 108, 109).

Regarding claim 39, Hegendoerfer teaches in figures 1 and 4-6 the apparatus (100), wherein the reflector (118) is disposed on a first side of the driven element (122);

and wherein each director (102, 104, 106, 107, 108, 109) is disposed on a second side of the driven element (122).

Regarding claim 40, Hegendoerfer teaches in figures 1 and 4-6 the apparatus (100), wherein the driven element (122) and the at least one parasitic element (118, 102, 104, 106, 107, 108, 109) facilitate a broadcast by the antenna of a signal having a free space wavelength.

Regarding claim 41, Hegendoerfer teaches in figures 1 and 4-6 the antenna (100), wherein the driven element (122) includes a dipole having a first and a second dipole element (112, 114) extending colinearly in opposite directions from and perpendicular to a substrate axis, the first and second dipole elements having adjacent ends spaced apart at equal distances on either side of the substrate axis.

Regarding claim 43, Hegendoerfer teaches in figures 1 and 4-6 the apparatus (100), wherein the driven element (122) includes a dipole having a first and a second dipole element (112, 114) extending colinearly in opposite directions from and perpendicular to a substrate axis, the first and second dipole elements having adjacent ends spaced apart at equal distances on either side of the substrate axis.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 42 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hegendoerfer (Cited above) in view of Huang (U.S. Patent No. 5,220,335).

Hegendoerfer teaches every features of the claimed invention in paragraph 2, except for the reflector is separate and distinct from the driven element.

Huang teaches in figure 1 the reflector (14) is separate and distinct from the driven element (12).

In view of the above statement, It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the reflector and driven element as shown in Hegendoerfer by using the reflector is separate and distinct from the driven element as taught by Huang in order to provide endfire beam directivity without requiring power dividers or phase shifters (See Abstract).

Response to Arguments

5. Applicant's arguments filed Nov. 16, 2004 have been fully considered but they are not persuasive.

Applicant argues that Hegendoerfer fails to teach or suggest " wherein the driven element is separate and distinct from the at least one parasitic element", it is not deemed to be persuasive. Because Hegendoerfer teaches in figure 4, the driven element (122) is separate and distinct from the at least one parasitic element (102).

Applicant argues that "the reflector disposed on one side of a dipole, and the at least one parasitic element disposed on the other side of the dipole" is not disclosed by any of the prior art, it is not deemed to be persuasive. Because Hegendoerfer teaches

in figure 4, the reflector [118] disposed on one side of a dipole (122), and the at least one parasitic element (102) disposed on the other side of the dipole (See FIG. 4).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-Chao Chen whose telephone number is (571) 272-1819. The examiner can normally be reached on Monday-Friday from 7 AM to 4:30 PM, First Fri. off.

Art Unit: 2821

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shih-Chao Chen
Shih-Chao Chen
Primary Examiner
Art Unit 2821

SHIH-CHAO CHEN
PRIMARY EXAMINER

SXC
March 10, 2005